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ABSTRACT

This study was designed to compare (on locus of control and several achievement variables) middle school students who have been instructed for two semesters in a cooperative learning study skills class with those who have been instructed for two semesters in a competitive study skills class. Seventy-six eighth graders were given a semester of instruction in a cooperative learning program that developed study skills using graphic organizers and process writing activities. An additional 34 students were given a traditional study skills class that was part of a larger, district-level competitive program. A total of 128 students completed a locus-of-control scale. Their academic grades from language arts, history, geography, study skills, mathematics, and science classes were gathered. Of the students who were instructed in the cooperative learning study skills classes, those who were internally oriented achieved higher grades in the academic block, competitive classes. Of the students instructed in the competitive study skills classes, those who were externally oriented tended to achieve higher grades in the academic block, competitive classes. Externally oriented students tended to achieve higher grades in the first semester competitive model language arts class. Internally oriented students tended to achieve higher grades in history in the cooperative academic block classes. (Author/KM)

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FOSTERING A BELIEF IN DESTINY BY EXPERIENCING SUCCESS IN SCHOOL FOR AT-RISK STUDENTS

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Paper presented at the Annual Meeting of the California Educational Research Association (San Diesgo, California, November 17-18, 1988)

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FOSTERING A BELIEF IN DESTINY BY EXPERIENCING SUCCESS IN SCHOOL FOR AT-RISK STUDENTS

Diane Harris, Ph.D., Penelope Dyer, Ph.D., Susan Tracz, Ph.D.

ABSTRACT

The study was designed to compare middle school students who have been instructed for two semesters in a cooperative learning study skills class with those who have been instructed for two semesters in a competitive study skills class on locus of control and several achievement variables. Seventy-six eighth graders were given a semester of instruction in a cooperative learning program that developed study skills using graphic organizers and process writing activities. An additional 34 students were given a traditional study skills class that was part of a larger, district level competitive program. A total of 128 students completed a locus of control scale. Their academic grades from language arts, history, geography, study skills, mathematics, and science classes were gathered. Of the students who were instructed in the cooperative learning study skills classes, those who were internally oriented achieved higher grades in the academic block, competitive classes. Of the students instructed in the competitive study skills classes, those who were externally oriented tended to achieve higher grades in the academic block, competitive classes. Externally oriented students tended to achieve higher grades in the first semester competitive model language arts class. Internally oriented students tended to achieve higher grades in history in the cooperative academic block class.

Introduction

Many research studies have focused on locus of control orientation and how people learn. Rotter's (1975) initial reference to the locus of control was referred to as the concept of internal versus external control of reinforcement. He described the initial interest which evolved from an observation that expectancies varied systematically following reinforcements depending on the situation and the characteristic of the person whose behavior was reinforced. The "nature" of the reinforcement, the history and pattern of the reinforcement, and the value attached to the reinforcement, Rotter identifies as important and most likely to determine the behavior that is reinforced. Rotter(1975) defines the construct of internal versus external control of reinforcement as:

> When a reinforcement is perceived by the subject as following some action of his own but not being entirely contingent upon his action, then, in our culture, it is typically perceived as the result of luck, chance, fate, as under the control of powerful others, or as unpredictable because of the great complexity of the forces surrounding him. When the event is interpreted in this way by an individual, we have labeled this a belief in external control. If the person perceives that the event is contingent upon his own behavior or his own relatively permanent characteristics, we have termed this a belief in internal control (Rotter, 1966, p.1).

Rotter also suggests that the internal versus external control should approximate a normal curve rather than a dichotomous paradigm.

It was explained by Nowicki (1982), that Rotter suggests the locus of control is only one of the potential generalized expectancies that may explain behavior. The situation in which the belief that the reinforcement was under external control should be considered. Expectancies for a particular type of reinforcement are determined by experiences that occur in perceived similar situations. When two situations are perceived as similar, expectancies of reinforcement can be generalized from one situation to another. The possible changes resulting from reinforcement for one situation may impact the expectation of change in the other situation. "Expectancies in each situation are determined not only by specific experiences in that situation but also, to some varying extent, by experiences in other situations that the individual perceives as similar" (Rotter, 1975, p.57).

The competitive-cooperative model may be one of the situations to explore. According to Wheeler and Ryan (1973) a cooperative problem-solving group is one in which "all members' rewards are directly proportional to the quality of the group output. A pure competitive problem-solving group is one in which members' outcomes are not in correspondence; a group product that yields one member a maximum return yields minimal returns for others . . ."(p. 403). In reference to locus of control, according to Nowicki (1982):

> Because internals depend primarily on themselves to obtain relevant reinforcements, we suggest that they would react to a competitive situation with renewed efforts, which in turn, should result in

> increased performance. In cooperative situations, however, internals need to share responsibility for their reinforcements with others. Such sharing should mitigate the role of internality, resulting in lowered persistence and lowered achievement compared to those situations that are purely competitive. Externals on the other hand, should remain relatively unaffected by whether or not the situation requires them to be competitive or cooperative. From the perspective of externals, it doesn't matter what they do because they perceive themselves as relatively unable to affect the flow of reinforcements. (p 158)

In this study, Nowicki (1982) found that in a competitive situation, subjects who were internally oriented appeared to be more successful than subjects who were externally oriented, but the relationship did not hold in a cooperative situation. Subjects who were internally oriented did not change their behavior patterns for the situation, but maintained a consistency of function in both situations. However, subjects who were externally oriented appeared to change their performance patterns. As found by Rotter (1975), during a cooperative situation, externally oriented subjects' performance appeared to be similar to internally oriented subjects' patterns, but more success was experienced by subjects who were externally oriented in a cooperative situation than subjects who were externally oriented in a competitive one. A cooperative learning environment may have motivated the subjects who were externally oriented to perform at high levels of achievement functions. In a similar study, Rotter (1975) found that in competitive achievement skill situations, behavior patterns of externally oriented

subjects were in some cases similar to expected patterns of subjects who were internally oriented, but in other cases, externally oriented subjects acted much as externally oriented subjects were expected to behave.

The relationship between locus of control and achievement has been explored by many studies (Nowicki, 1982). Nowicki postulated that a person who perceives that the impact of effort should demonstrate greater achievement than an individual who does not perceive a relationship between internal factors and achievement reinforcements. Rotter has shown a relationship between student study habits and locus of control although the study habits were described by self-reports of the subjects (Rotter, 1975). Thus locus of control may be a better predictor of success in a given achievement environment if the application of learned skills can be directly applied to a new situation. For example, if the study skills learned in a cooperative environment by an externally oriented student can be used directly in language arts class, then the identification of locus of control could be used as a predictor of success. However, if the study skills learned in a cooperative environment by an externally oriented student cannot be directly used in a class such as mathematics, then the locus of control would not serve as an accurate predictor of success (Rotter, 1975).

The present study postulates that when study skills are taught to students in a cooperative situation, they are able to experience cognitively the relationship between their behavior or performance and academic achievement. The expectation is that children who have learned effective study skills may demonstrate an increase in grades. Given the above research findings, the locus of control should become a predictor of success when the learned study skills can be directly applied

to the academic block classes. Subjects who are externally oriented should achieve higher grades in their academic block classes as a result of cooperative learning study skill instruction. Subjects who are internally oriented should achieve higher grades in their academic block classes as a result of competitive study skill instruction. It is expected that the language arts class is most highly correlated to the skills involved in the study skill instruction in both the cooperative and competitive environments; direct application of study skills should occur. The history and geography classes are the next most highly correlated to the skills involved in the study skill instruction; partial application of study skills should occur. Finally, the mathematics and science classes are poorly correlated to the skills involved in the study skill instruction; limited application of the study skills should occur.

METHOD

Subjects

The subjects were 128 male and female 12-13 year old students who were members of an ethnically diverse school district in Central California. The population consists of Hispanic, South East Asian, Euro-American, and African-American students. Students participating in this study had scored below the 50th %ile on the Comprehensive Test of Basic Skills (CTBS). They were identified by the school administrators as a population that needed special help in study skill development for success in their academic classes. The study skills classes in which the treatment and the control activities took place were part of this identified

district program. As identified by the district statistics, 85% of the students in the study skills program represented lower and lower-middle socio-economic groups.

The school district has used a competitive instructional model for the past 25 years. This model as described by Benninga and Tracz (1988) contains a system by which each student, teacher, administrator, and school unit competes for recognition in a variety of district sponsored academic and co-curricular activities. However, although many of these activities involve intergroup competition, they also involve intragroup cooperation.

Measures

Locus of control. The Nowicki-Strickland Internal-External Control Scale for Children (CNS-IE) is an inventory of 40 questions that are answered either yes or no (Nowicki & Strickland, 1973; Nowicki, 1979). Designed for students in grades 3 through 12, CNS-IE scores have shown acceptable reliability and validity in well over 200 studies (see Nowicki, 1979).

Achievement. The teacher-assigned academic class grades in 1) language arts, 2) history, 3) geography, 4) mathematics, and 5) general science were collected for the fall and spring semesters of students participating in the study. Tasks that were learned in the study skill classes were needed to be applied in these classes to insure academic success. Study skill class grades were also collected. Grades were coded on a four point scale with a four indicating an A and a zero indicating an F. One third (i.e., .33) was added or subtracted to the coding for each letter grade for pluses and minuses.

Procedures

The regular classroom teachers had the subjects in both the treatment and the control groups complete the locus of control scales; teachers instructed them that the survey was devised to measure how children their age felt about certain things and that there were no right or wrong answers. The teachers read each item of the survey aloud while students read the inventory questions.

An experimental group of 76 eighth grade subjects were determined by the student CTBS scores. An additional control group of 34 eighth grade subjects was determined in the same way. All students participating in the study had scored below the 50th %ile on the CTBS. The subjects attended class in groups of approximately 30 for 55 minutes daily over-and-above their normal academic day (this class replaced their elective class) during the fall and spring semesters. Each section was taught by a different teacher. The subjects in the experimental group were taught study skills (vocabulary development, spelling, usage, grammar, diction, conceptual development using graphic organizers, story element development, pre-writing organizational activities, report writing techniques, note taking, semantic mapping, and peer editing) using a cooperative learning instructional model. Within the class, subjects were assigned to groups of five with specific jobs. The group functioned together to produce a finished product. Each student's grade depended upon the quality of the product developed by the group. Students were explicitly directed to apply learned activities in the study skills class to their other academic classes.

Subjects in the control groups were taught the same study skills in a competitive learning environment. Subjects completed tasks individually with little group interaction. Subjects were responsible for their own work and their own

grades. These students were also explicitly told to apply learned activities in the study skills class to their other academic classes.

RESULTS

In Table 1, the means, standard deviations, sample sizes and significant t-test for locus of control and achievement variables are shown. Significant differences were found for Language arts, semester I ($t=3.78$, $p<.0001$), Language arts, semester II ($t=1.94$, $p=.055$), Mathematics, semester II ($t=1.82$, $p=.072$), General Science, semester I ($t=2.03$, $p=.049$), Geography, semester I ($t=3.08$, $p=.003$), and Geography, semester II ($t=2.04$, $p=.045$). In all significant cases, means were higher in the cooperative group.

Table 2 presents the correlation coefficients between locus of control and the achievement variable along with sample sizes for the cooperative and competitive groups. Each coefficient was tested for the hypothesis of zero correlation and these probabilities are also given in Table 2. There were significant results at the .10 level in only two instances. In the cooperative group there is a significant correlation between locus of control and first semester history ($r= -.29$, $p= .08$), and in the competitive group there is a significance between locus of control and first semester language arts ($r= .26$, $p = .07$). The results in Table 2 are noteworthy, since most of the correlations for the cooperative learning model are negative, while most of the correlations for the competitive group are positive. The emerging pattern from these results seem to suggest that students in the cooperative learning model with an internal locus of control tend to earn higher grades in the academic block classes while students who are externally oriented tend to earn higher grades in the competitive learning model.

DISCUSSION

The results of the present study support the hypothesis that the environment in which instruction takes place does affect students, differently. In the competitive instructional learning environment, the externally oriented students appeared to demonstrate success in the academic block classes. The significant relationship was found in the Language Arts Class, Semester I, where students who appeared to be externally oriented tended to show higher levels of academic success. On the other hand, students who were internally oriented appeared more successful in the academic block classes in the cooperative learning environment. The significant relationship was found in the History Class, first semester. In the competitive learning environment, internally oriented students appeared to have limited success in the academic block classes .

To further examine the results of the study, a closer examination of the learning environments may be warranted. In the cooperative learning study skills classes, the process of learning was based on a schema theory which fostered metacognitive awareness in the learner. Textbooks based on science topics with both narrative and expository text, report writing activities, creative writing activities, peer editing, and basic study skills that fostered an organization of information for future use was emphasized. However, specific homework from other classes was not addressed during the study skills class time.

In the competitive learning environment, a more traditional approach to study skills classes occurred. The curriculum in these classes consisted of study skill learning activities that were accomplished with specific textbooks and

class homework assignments from the academic block classes of the students. The direct application of the study skills classes in completing homework assignments for other academic block classes occurred.

While students learned in a cooperative learning environment, the expectation involved application of learned study skills from a cooperative environment to a competitive one, within the same school setting. The difficulty may have been related to the transference of these skills learned in a cooperative class to other classes that were more competitively based. Thus these skills may not have been as directly transferable as the skills learned in a competitively based study skills class. The lack of transfer may not be due to the deficiencies in the students' capabilities, but in the dissimilarities of the environments within the same school setting. In the competitive learning environment, the transfer of skills may have been encouraged by the similarity of environments between the study skills classes and the other academic block classes.

There are advantages and disadvantages to generalized expectancies which allow for broad predictions from limited data (Rotter, 1975). However, as Rotter (1975) also points out, generalized expectancies "represent only one of many variables that enter into the prediction of behavior, and their relative importance is a function of the novelty and/or ambiguity of the situation" (p.59). A more specific generalized expectancy may allow for a stronger prediction of a similar situation, but a poorer prediction for other situations. In other words, for the externally oriented learner, the success of learning study skills in a cooperative learning setting may be limited to that specific environment and may not be a predictor of future success in other academic block

classes in which cooperative learning is used. However, the similarity between environments may appear to be more useful to externally oriented students. When learned skills can be directly applied to another situation because of the similarities of the environment, externally oriented students appear to experience success.

There are a number of implications for teachers from this study. Classrooms that contain cooperative learning activities will enhance the opportunities for externally oriented students to excel in the learning process. The competitive elements within a traditional classroom will enhance the opportunities for internally oriented students to excel in the learning process. Teachers should consider blending the use of cooperative learning activities for group-process needs and the use of competitive situations within the curriculum. The blend of the two learning activities will serve both the internally and externally oriented students within a class. If both cooperative and competitive learning activities are included within the classroom, transfer of learning to other classes will be more likely to occur for both types of learners. Fostering an environment in which students believe they can be successful regardless of their locus of control serves as a reinforcement for continued successful behavior and transfer of learning to new situations.

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TABLE 1

Means, Standard Deviations, Sample Sizes and Significant t-Test for Locus of Control and Achievement Variables for Cooperative and Competitive Model Groups

Variable	Group 1: Cooperative Model			Group 2: Competitive Model				
	$\bar{X}$	SD	n	$\bar{X}$	SD	n	t	p
Locus of Control	58.27	3.62	76	57.90	4.49	52		
Language Arts S1	2.50	.98	72	1.73	.99	34	3.78	<.0001
Language Arts S2	2.27	1.07	73	1.86	.89	34	1.94	.055
Math S1	2.03	1.17	66	1.65	1.03	34		
Math S2	2.14	1.22	70	1.71	.94	33	1.82	.072
General Science S1	2.45	1.16	23	1.69	1.23	18	2.03	.049
General Science S2	1.90	1.61	24	2.06	.82	18		
Geography S1	2.35	.94	44	1.50	.94	16	3.08	.003
Geography S2	2.30	1.02	45	1.67	1.18	16	2.04	.045
History S1	2.04	1.21	24	1.61	.80	18		
History S2	2.20	1.25	25	2.11	.86	18		
Study Skills	2.96	.94	73	2.85	1.09	33		

TABLE 2

Correlation Coefficients Between Locus of Control and Achieving/Academic Grading for the Cooperative and Competitive Models

Variable Correlated With Locus of Control	Group 1: Cooperative Model			Group 2: Competitive Model		
	r	(n)	p	r	(n)	P
Language Art S1	-.07	(72)	.28	.26	(34)	.07
Language Art S2	-.08	(73)	.26	.06	(34)	.37
Math S1	-.06	(66)	.31	.11	(34)	.27
Math S2	-.11	(70)	.18	.13	(33)	.24
General Science S1	-.12	(23)	.29	-.19	(18)	.23
General Science S2	-.24	(24)	.13	.01	(18)	.49
Geography S1	-.11	(44)	.24	.17	(16)	.27
Geography S2	-.14	(45)	.19	.25	(16)	.18
History S1	-.29	(24)	.08	.17	(18)	.25
History S2	-.22	(25)	.15	-.14	(18)	.29
Study Skills	.07	(73)	.28	-.02	(33)	.46